

# TECHNOLOGY AND TOUCH IN HEALTHCARE- PERSPECTIVES FROM THE TRENCHES

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# OVERVIEW

OVERVIEW: IN A TIME WHEN TECHNOLOGY AND HEALTHCARE DELIVERY HAVE JOINED FORCES TO IMPROVE HEALTHCARE QUALITY, MORE AND MORE HEALTHCARE SYSTEMS AND TECHNOLOGY VENDORS OFFER NEW AND INNOVATING WAYS TO IMPROVE PATIENT CARE AND DELIVERY QUALITY. THE EXPLOSION OF QUALITY METRICS AND THE DRIVE FROM FEE FOR SERVICE BASED CARE TO QUALITY BASED CARE HAS PUT A GREAT DEAL OF PRESSURE ON PROVIDERS TO TRANSFORM HOW THEY ANALYZE, REPORT AND IMPLEMENT DATA DRIVEN CHANGES TO PATIENT CARE. THE MOST NOTICEABLE CHANGES ARE IN PRIMARY CARE (THE 'TRENCHES' OF HEALTHCARE), WHICH IS OFTEN THE FIRST PORTAL INTO A HEALTH SYSTEM. WITH THE MOVE TO ACCOUNTABLE CARE, THE IMPORTANCE OF PRIMARY CARE IS MORE IMPORTANT NOW THAN EVER. WHILE THE TASK BEFORE THE HEALTHCARE INDUSTRY IS DAUNTING, THE USE OF HEALTH INFORMATION TECHNOLOGY IN IMPROVING HEALTHCARE DELIVERY HAS PRODUCED VERY TANGIBLE, POSITIVE OUTCOMES. THIS SPEAKS TO GROWING INVESTMENT AND INVOLVEMENT BY SILICON VALLEY TECHNOLOGY GIANTS ENTERING THE HEALTHCARE SPACE. THIS TALK EXPLORES THESE CONCEPTS AS WE TRY TO RECONCILE TECHNOLOGY AND TOUCH IN THE TRENCHES AND LOOK TO THE FUTURE OF A MORE EFFICIENT HEALTHCARE DELIVERY SYSTEM.

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# CONFLICT OF INTERESTS

I WILL MENTION MANY PRODUCTS, BRANDS, TECHNOLOGIES

OTHER THAN EMPLOYMENT BY COOPER UNIVERSITY HEALTH CARE, I HAVE NO OTHER  
DECLARATIONS

NO INVESTMENTS OR RELATIONSHIPS IN PRODUCTS/BRANDS MENTIONED

# THE REVOLUTION OF MEDICAL INNOVATION: THE CHALLENGES

THE EXPLOSION OF INNOVATION

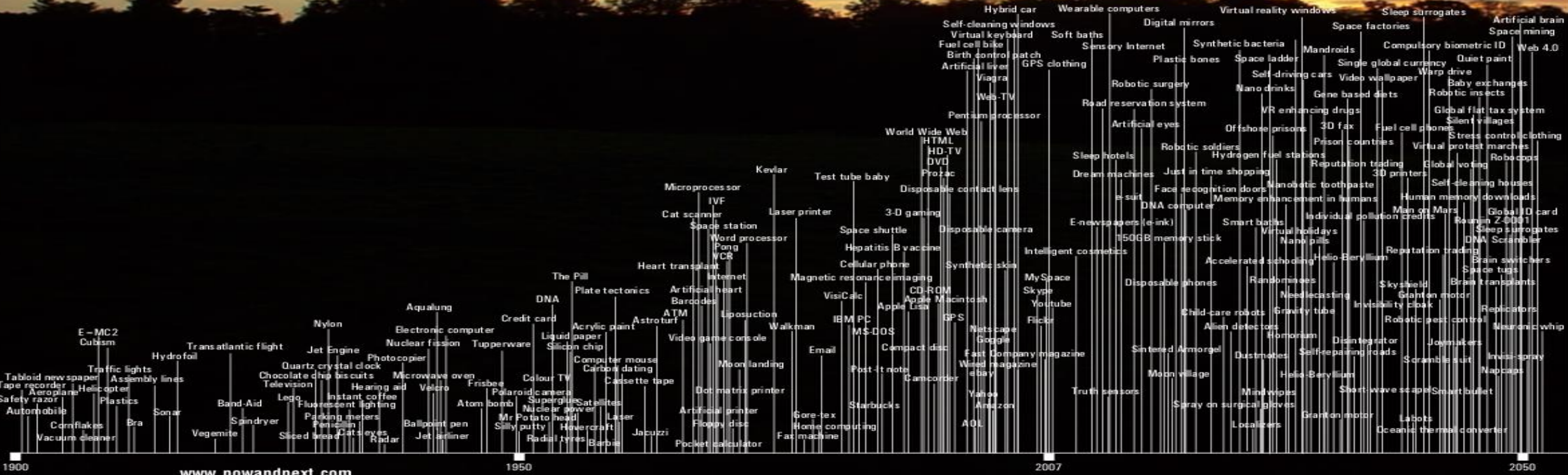
HOW WE DIE HAS CHANGED

THE MOSAICISM OF PAYMENT MODELS

MEDICAL INNOVATION AND REVENUE MODELS

# EXPLOSION OF INNOVATION

## Innovation timeline 1900-2050



# WE DIE DIFFERENTLY THROUGH THE CENTURIES

- UNTIL THE EARLY 1900'S- POPULATIONS DIED LARGELY DUE TO INFECTIONS
- 1900-2000: LIFESTYLE DISEASES
- 2000 AND BEYOND- CANCER, "SUPERBUGS"

Medicare  
EMTALA  
Care I  
I Service  
Medicaid II I  
I Fee 2 I Accountable  
Tricare  
Medical Debt  
Charity

A MOSAIC  
OF PAYMENT  
SYSTEMS

# MEDICAL INNOVATION OUTPACED OUR ABILITY TO GENERATE REVENUE MODELS

- EXPENSE OF MEDICAL EQUIPMENT (AUTO-ANALYZERS, CT SCANNERS)
- INFORMATION SYSTEM EXPENSE (ELECTRONIC HEALTH RECORDS, LABORATORY INFORMATION SYSTEMS)
- NEW TEST AND AS GOOD AS OLD? COLOGUARD VERSUS COLONOSCOPY
- TELEPRESENCE (TELEPSYCHIATRY, TELEMEDICINE) TECH IS HERE, HOW DO WE GET REIMBURSED FOR IT?



# WORKFORCE CHANGES

- SYNCHRONOUS EVOLUTION OF MEDICAL AND SURGICAL SPECIALTIES THROUGH THE 1900s
- ACCESS TO SPECIALTY AND SUBSPECIALTY CARE- UNPARALLELED ACCESS IN THE U.S.
- RISE OF PRIMARY CARE
  - PREVENTION IS KEY AS COSTS RISE
  - RISE OF EVIDENCE BASED MEDICINE
  - CARE FOR POPULATIONS
  - COMBATTING 'FAKE' SCIENCE- IMMUNIZATIONS CAUSE AUTISM
- RISE OF MIDDLELEVEL PROFESSIONALS
- RECOGNITION THAT THE US NEEDS MORE HEALTHCARE PROFESSIONALS

# THE IMPACT OF HEALTH INFORMATION TECHNOLOGY AND HIMSS

# THE IMPACT OF HEALTH INFORMATION TECHNOLOGY

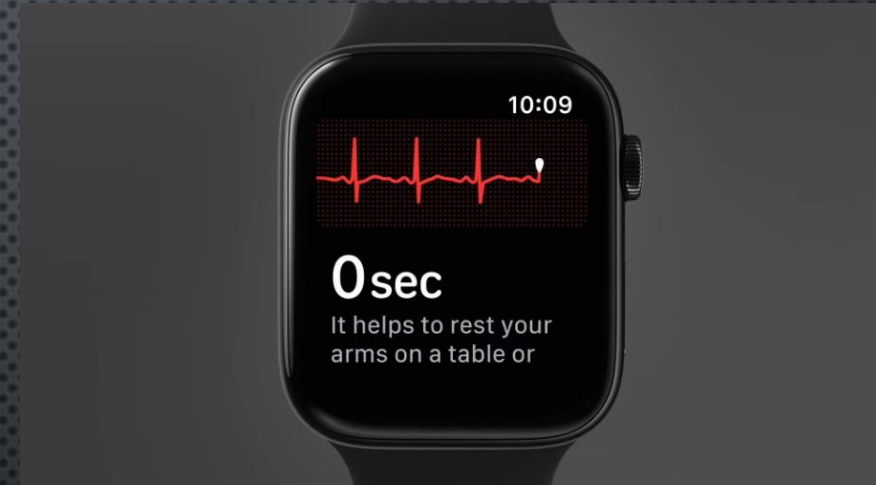
- DISEASE IMPROVEMENT- REDUCTION OF COMPLICATIONS DUE TO DIABETES SINCE 1990
- THE ELECTRONIC HEALTH RECORD REVOLUTION
  - ACCESS TO EXTERNAL MEDICATIONS
  - ENHANCED SAFETY-LEGIBLE NOTES AND PRESCRIPTIONS
  - FULFILLING THE RECOMMENDATIONS OF “CROSSING THE QUALITY CHASM”
  - CHRONIC DISEASE MANAGEMENT

# THE IMPACT OF HEALTH INFORMATION TECHNOLOGY (CONTINUED)

- PROMOTING INTEROPERABILITY
  - COMBATTING THE OPIOID EPIDEMIC WITH STATE PRESCRIPTION MONITORING PROGRAMS AND ELECTRONIC PRESCRIBING OF CONTROLLED SUBSTANCES
  - INFORMATION SHARING ACROSS REGIONS AND POPULATIONS TO FOLLOW PATIENT CHOICE (E.X. HSX HEALTH INFORMATION EXCHANGE)
  - STATE IMMUNIZATION DATABASES
  - CANCER REGISTRIES

# ENHANCING TOUCH- PATIENT DRIVEN TECHNOLOGY

- WEARABLES
  - APPLE WATCH – 4<sup>TH</sup> EDITION WITH SINGLE LEAD ECG
  - ANDROID WEAR SMARTWATCHES
  - FIT BIT
- CONNECTED DEVICES
  - GLUCOMETERS
  - BLOOD PRESSURE MONITORS
  - PULSE OXIMETRY AND MORE!
- SMARTHOMES
  - AMAZON ALEXA
  - GOOGLE ASSISTANT
  - APPLE HOMEPOD



# ENHANCING TOUCH- PATIENT DRIVEN TECHNOLOGY (CONTINUED)

- PATIENT REPORTED DATA
- PATIENT PORTALS



# THE IMPACT OF HEALTHCARE LEADERSHIP

- LEADERS ARE MUCH MORE SAVVY ABOUT THE BUSINESS AND OPERATIONS OF HEALTHCARE DELIVERY
- LEADING THROUGH CULTURAL AND TECHNOLOGICAL CHANGE- LEVERAGING TOUCH TO GUIDE PHYSICIANS AND MID-LEVELS THROUGH TECHNOLOGICAL AND OPERATIONAL CHANGE
  - THE POWER OF AN 'ATTA-GIRL' OR 'ATTA-BOY'
  - DETERMINING PROGRESSIVE COMPENSATION PLANS AND CAREER DEVELOPMENT FOR PHYSICIANS AND MID-LEVELS
    - COOPER LEADERSHIP DEVELOPMENT INSTITUTE- A YEAR LONG PROGRAM TO TRAIN PHYSICIANS FROM DIFFERENT DISCIPLINES TO BE THE LEADERS OF COOPER AND HEALTHCARE OF TOMORROW.
  - CLINICIANS IN LEADERSHIP POSITIONS- NEW ROLES LIKE CMIOs, CNIOs, EVEN CEO FOR PROVIDERS.



# ACHE AND HIMSS

- POWERFUL ALLIANCE
- MARRYING THE OPERATIONAL AND TECHNOLOGICAL
- LIKE CHOCOLATE AND PEANUT BUTTER



# TECHNOLOGY AND TOUCH IN THE TRENCHES

- PRIMARY CARE HAS LONG BEEN THE ENTRE' INTO COMPREHENSIVE CARE IN DIVERSIFIED HEALTH SYSTEMS
- MORE TECHNOLOGY HAS COME TO PRIMARY CARE IN THE LAST DECADE THAN EVER BEFORE
- THE MOVE FROM FEE FOR SERVICE, INDIVIDUAL DRIVEN CARE TO VALUE BASED POPULATION BASED CARE IS A MASSIVE PARADIGM SHIFT.
- SPECIALIZED SOFTWARE DRIVES POPULATION HEALTH INITIATIVES BY IDENTIFYING ISSUES IN TRANSITIONS OF CARE AS WELL AS GAPS IN CARE.

# TECHNOLOGY IN PRIMARY CARE

- ELECTRONIC HEALTH RECORDS- SOME OF THE OLDEST TECHNOLOGY IN HEALTH CARE.
- HEALTH INFORMATION EXCHANGES- SOME HAVE ACCESS AND THAT EXTERNAL DATA HAS BEEN THOUGHT TO REDUCE COSTS DUE TO REDUCTION IN DUPLICATE TEST ORDERING BY UP TO 30%
- CONVERGENCE DEVICES- LIKE SMARTPHONES HAVE CONSOLIDATED THE PHONE, THE PAGER AND THE REMOTE HER
- CONSOLIDATED DEVICES LIKE DIGITAL STETHOSCOPES NOT ONLY RECORD AND DISPLAY HEART SOUNDS BUT ALSO RECORD SINGLE LEAD ECGs (EKO).
- SOME DEVICES CONNECT TO SMARTPHONES TO AID IN PORTABLE DIAGNOSES (ALIVECOR)



PRIMARY CARE  
PROVIDERS FANTASY  
DIAGNOSTIC TOOL  
A REALITY!

# TOUCHING THE MIND AND BODY

- INNOVATIVE CARE DELIVERY MODELS ARE EVOLVING
- INTEGRATED BEHAVIORAL HEALTH AND THE PATIENT CENTERED MEDICAL HOME- A POWERFUL COMBINATION FOR ADDRESSING BIOPSYCHOSOCIAL ISSUES.
- INNOVATIVE CONCEPTS IN VALUE BASED CARE

# TOUCHING THE POPULATION WITH TECHNOLOGY

- POPULATION HEALTH SOFTWARE HELP ADDRESS CARE GAPS AND TRANSITIONS OF CARE
- UNDERSTANDING SOCIAL DETERMINANTS OF HEALTH AND ENGAGING IN COMMUNITY ACTIVITIES TO RAISE HEALTH AWARENESS
- ADDRESSING BASIC AND HEALTH LITERACY

# THE END GAME

- EXTENDING THE SOLVENCY OF MEDICARE
- IN 2008 , BY SOME SOURCES, MEDICARE WOULD BE INSOLVENT IN 2017
- NOW EXTENDED BY MEANINGFUL USE AND AFFORDABLE CARE ACT TO 2026-2029
- MEDICARE'S ANNUAL GROWTH 2000-2010- 7.3%
- MEDICARE'S ANNUAL GROWTH RATE 2010-2017- 1.3%
- THIS IS ALL OF US MAKING GREAT CHANGES!!